

ABSTRACT OF THE DISCLOSURE

A measurement system uses dual axis force sensor pins to effectively assess the tipping moment of a load-bearing vehicle and anticipate imminent tipping in any direction. The pins are installed in the pivot points of the boom of a lift vehicle and its main lift cylinder, substituting the standard structural pins presently used. For non-traditional boom support arrangements, one sensor pin for each moving part attachment to non-moving turntable is required. Each of the sensors provides the actual force components acting on the sensor in two perpendicular axes. The output signals are then utilized to assess vehicle stability and detect when the machine is approaching instability in order to warn the operator and/or restrict vehicle movements.